



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR 19 2017

CERTIFIED MAIL 7016 1970 0000 8992 6816
RETURN RECEIPT REQUESTED

City of Eden
Attn: Mr. Terry Shelton
Environmental Services Director
308 East Stadium Drive
Eden, North Carolina 27288

Re: Issuance of Administrative Order on Consent CWA-04-2017-4753 and
Closure of Administrative Order CWA-04-2012-4758
City of Eden, North Carolina, NPDES Permit No.: NC0025071
Mebane Bridge Waste Water Treatment Plant

Dear Mr. Shelton:

Pursuant to Section 309(a) of the Clean Water Act (CWA), 33 U.S.C. § 1319(a), as amended, the Director of the Water Protection Division, United States Environmental Protection Agency Region 4, has determined that the above named facility is in violation of Section 301 of the CWA, 33 U.S.C. § 1311. As a result, the Director has issued the enclosed Administrative Order on Consent (AOC). The issuance of this AOC also serves to close-out Administrative Order CWA-04-2012-4758 (paragraph 15 of the enclosed AOC).

This AOC does not replace, modify or eliminate any other requirements of the CWA or National Pollutant Discharge Elimination System (NPDES) permit. Notwithstanding the issuance of this AOC, the EPA retains the right to bring further enforcement action under Sections 309(d) or 309(g) of the CWA, 33 U.S.C. §§ 1319(d) or 1319(g), for the violations cited therein or for any other violation of the CWA. Violations of the CWA, including requirements contained in a NPDES permit or an AOC issued under Section 309(a) of the CWA, remain subject to a civil penalty of up to \$37,500 per day for each violation, pursuant to Sections 309(d) or 309(g) of the CWA, 33 U.S.C. §§ 1319(d) or 1319(g), as amended by the *Civil Monetary Penalty Inflation Adjustment Rule*, 73 Fed. Reg. 75340 (December 11, 2008). Such violations may also be subject to criminal penalties pursuant to Section 309(c) of the CWA.

If you have any questions concerning the enclosed AOC, please contact Ms. Laurie Jones at (404) 562-9201, by email at jones.laurie@epa.gov, or at the address on the letterhead.

Sincerely,



Denisse D. Diaz, Chief
NPDES Permitting and Enforcement Branch
Water Protection Division

Enclosures

cc: Mr. Jay Zimmerman
North Carolina Department of Environment and Natural Resources



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

APR 19 2017

CERTIFIED MAIL 7016 1970 0000 8992 6823

RETURN RECEIPT REQUESTED

Mr. Jay Zimmerman
Director, Division of Water Resources
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, North Carolina 27699

Re: Administrative Order on Consent
Issuance of Administrative Order on Consent CWA-04-2017-4753 and
Closure of Administrative Order CWA-04-2012-4758
City of Eden, North Carolina, NPDES Permit No.: NC0025071
Mebane Bridge Waste Water Treatment Plant

Dear Mr. Zimmerman:

Pursuant to Section 309(a) of the Clean Water Act (CWA), 33 U.S.C. § 1319(a), I have determined that the above referenced facility is in violation of Section 301 of the CWA, 33 U.S.C. § 1311. As a result, I have issued an Administrative Order on Consent (AOC), a copy of which is enclosed for your reference. The issuance of this AOC also serves to close-out Administrative Order CWA-04-2012-4758 (paragraph 15 of the enclosed AOC).

Sincerely,

A handwritten signature in blue ink, appearing to read "MSW", written over a circular stamp.

Mary S. Walker
Director
Water Protection Division

Enclosures

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

IN THE MATTER OF:) ADMINISTRATIVE ORDER ON CONSENT
)
THE CITY OF EDEN,) DOCKET NO. CWA-04-2017-4753
NORTH CAROLINA)
)
PROCEEDING UNDER SECTION)
309(a) OF THE CLEAN WATER ACT)
33 U.S.C. § 1319(a))
NPDES PERMIT NO. NC0025071)

ADMINISTRATIVE ORDER ON CONSENT

I. STATUTORY AUTHORITY

1. Section 309(a) of the Clean Water Act (CWA), 33 U.S.C. § 1319(a), provides that, whenever the U.S. Environmental Protection Agency (the EPA) finds that any person is in violation of any condition or limitation which implements, *inter alia*, Section 301(a) and 402 of the CWA, 33 U.S.C. §§ 1311(a) and 1342, the EPA may issue an order requiring such person to comply with such condition or limitation, and shall specify a time for compliance that the EPA determines to be reasonable.

2. The following Findings are made and Order on Consent issued pursuant to the authority vested in the EPA by Section 309(a) of the CWA, 33 U.S.C. § 1319(a), as amended. This authority has been delegated to the Regional Administrator of the EPA, Region 4, and further delegated by the Regional Administrator to the Director of the Water Protection Division, EPA, Region 4.

II. EPA FINDINGS

3. To accomplish the objective of the CWA, as defined in Section 101(a) of the CWA, 33 U.S.C. § 1251(a), to restore and maintain the chemical, physical and biological integrity of the nation's waters, Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the point source discharge of pollutants into navigable waters except as in compliance with a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

4. Section 402 of the CWA, 33 U.S.C. § 1342, establishes the NPDES permit program authorizing the EPA or authorized states to administer the NPDES permit program, including the issuance of NPDES permits allowing for the discharge of pollutants into navigable waters subject to specific terms and conditions. The EPA has granted the State of North Carolina, through the Department of Environment and Natural Resources (NCDENR), authorization to issue NPDES permits pursuant to Section 402(b) of the CWA.

5. The City of Eden (the City) is a "person" within the meaning of Section 502(5) of the CWA, 33 U.S.C. § 1362(5), and is thus subject to its requirements.

6. The City owns and operates a Publicly Owned Treatment Works (POTW), including a Wastewater Collection and Transmission System (WCTS), called the Eden-Mebane Bridge Wastewater Treatment Plant (WWTP) located at 204 Mebane Bridge Road, Eden, North Carolina and operating

under NPDES Permit Number NC0025071. This POTW discharges “pollutants” as a point source into the Dan River, a navigable water, as defined in Section 502(7) of the CWA, 33 U.S.C. § 1362(7).

7. The State of North Carolina, through the NCDENR, issued NPDES Permit Number NC0025071 (the Permit) to the City for the POTW with the effective date of March 1, 2015, and the expiration date of April 30, 2018.

8. The Permit includes a requirement, Part I.2., to properly operate and maintain the POTW, including the WCTS which transports wastewater to the WWTP.

9. On November 26, 2008, the EPA sent an information request letter to the City pursuant to Section 308(a) of the CWA, 33 U.S.C. § 1318(a). This information request letter required the City to respond and give EPA information regarding details on sanitary sewer overflows (SSOs) to evaluate the performance of the POTW and its associated WCTS, and to assess the City’s compliance with the Permit and the CWA.

10. Based on its review of information obtained from the City pursuant to the Section 308 request, the EPA found that the City has experienced numerous SSOs from the WCTS.

11. For purposes of this Order on Consent, a SSO is defined as an overflow, spill, release, or diversion of wastewater from the City’s WCTS. SSOs include overflows or releases of wastewater that reach navigable waters; overflows or releases of wastewater that do not reach navigable waters; and wastewater backups into buildings that are caused by blockages or flow conditions in a sanitary sewer other than a building lateral. Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned is not a SSO.

12. On December 28, 2011, the EPA issued Administrative Order No. CWA-04-2012-4758 (2011 AO) (Attachment 1) to the City for violations of the CWA and the Permit as a result of SSOs.

13. Pursuant to the 2011 AO, the City developed and implemented the following Management, Operation and Maintenance (MOM) Programs: a Pump Station Operations Program (dated July 2, 2014); a Pump Station Preventive Maintenance Program (dated August 28, 2014); a Sanitary Sewer Overflow Response Plan (dated July 2, 2014); and a System Evaluation and Rehabilitation Plans (SERP) which consists of a Capacity Assessment (dated April 27, 2015), a Sewer System Evaluation Survey (dated January 27, 2015), and a WCTS Remediation Plan (dated June 2015, subsequent revisions on October 14, 2015, and August 1, 2016).

14. The City complied with the terms of the AO, except as related to the timeframe for completion of the remediation projects prescribed in the WCTS Remediation Plan. The City stated in the October 14, 2015, WCTS Remediation Plan submittal that it was not able to finance the proposed remediation projects within the two (2) year timeframe prescribed in the AO. Following the discovery of availability of a new funding source, on August 1, 2016, the City submitted a revised WCTS Remediation Plan (Attachment 2) which provided for a five (5)-year implementation schedule for the proposed remedial measures.

15. Upon the issuance of this AOC, the EPA hereby approves the revised WCTS Remediation Plan, dated August 1, 2016, and closes the 2011 AO.

16. Pursuant to the AO the City reported to the EPA continuing occurrences of SSOs from the WCTS.

17. The City has violated Section 301(a) of the CWA, 33 U.S.C. § 1311(a), in that the City has discharged untreated wastewater containing pollutants to the navigable water(s) at locations not authorized by an NPDES permit.

18. The City has violated Part I.2. of its Permit by failing to properly operate and maintain its POTW resulting in SSOs from the WCTS.

19. Based on the above, the EPA finds that the City is in violation of Section 301 of the CWA, 33 U.S.C. § 1311, and Part I.2. of its Permit.

III. ORDER ON CONSENT

Based on the foregoing **EPA FINDINGS** and pursuant to the authority of Section 309(a) of the CWA, 33 U.S.C. § 1319(a), **IT IS HEREBY ORDERED AND AGREED TO** that the City comply with the following requirements:

20. The City shall implement the revised WCTS Remediation Plan, dated August 1, 2016 (Attachment 2), including the completion of remediation projects as described in Section 9.2.2 and Tables 9.1 and 9.4 therein. As set forth in Table 9.4, the City shall complete these remediation projects no later than February 28, 2022.

21. The City shall continue to implement and revise when necessary the other ongoing MOM Programs developed through the 2011 AO. These programs include the Pump Station Operations Program (dated July 2, 2014), the Pump Station Preventive Maintenance Program (dated August 28, 2014), and the Sanitary Sewer Overflow Response Plan (dated July 2, 2014).

22. The goal of the WCTS Remediation Plan and the other MOM Programs shall be to eliminate all SSOs.

IV. DOCUMENTATION AND REPORT SUBMITTAL

23. The City shall submit to the EPA written semi-annual progress reports (Semi-Annual Reports) that include: (a) a description of the actions which have been taken toward achieving compliance with this Order on Consent during the previous six (6) months; (b) an assessment of the effectiveness of such actions in eliminating SSOs; (c) a list, which shall include the date and time, location, cause, ultimate destination, and volume of SSOs that occurred during the previous six (6) months; (d) an analysis of the cause of each such SSO; and (e) a description of the City's plan to address and prevent such SSOs from occurring in the future. The City shall begin to submit these Semi-Annual Reports to the EPA within thirty (30) days after the end of the first six (6) months after the effective date of this Order on Consent and shall continue to submit such reports every six (6) months thereafter until the submission of the Final Report as set forth below.

24. All reports, notifications, documentation, and submittals required by this Order on Consent shall be signed by a duly authorized representative of the City as specified by 40 C.F.R. §§ 122.22(b)(2) and (d) and shall include the following statement:

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

25. All reports, notifications, documentation, and submittals required by this Order on Consent shall be sent by certified mail or its equivalent to the following addresses:

Dénisse D. Diaz, Chief
Clean Water Enforcement Branch
Water Protection Division
ATTN: Ms. Laurie Jones
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

and

Jay Zimmerman, Director
Division of Water Resources
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, North Carolina 27699

26. Notifications to, or communications with, the EPA and NCDENR by the City shall be deemed submitted on the date they are postmarked and sent by certified mail or its equivalent. Notifications to, or communications with, the City by the EPA shall be deemed received three (3) days after the date they are postmarked and sent by certified mail or its equivalent.

27. When circumstances are occurring, or have occurred, which may delay the completion of any requirement of this Order on Consent, whether or not arising from causes beyond the control of the City, including, but not limited to its consultants and contractors, despite the City's best efforts to fulfill the requirement, the City shall so notify the EPA, in writing, within fifteen (15) days after the City learns, or in the exercise of reasonable diligence under the circumstances should have learned, of the delay or anticipated delay. The notice shall describe in detail the basis for the City's contention that it experienced a delay, the anticipated length of the delay, the precise cause or causes of the delay, the measures taken or to be taken to prevent or minimize the delay, and the timetable by which those measures will be implemented. Failure to so notify the EPA shall constitute a waiver by the City of any claim for delay under this paragraph as to the event in question. If the EPA finds that a delay in performance is or was from causes beyond the control of the City, the EPA may extend the time for performance, in writing, for a period to compensate for the delay resulting from such causes.

V. FINAL REPORT AND TERMINATION OF THIS ORDER ON CONSENT

28. Within 60 days after the City has satisfied the terms of this Order on Consent by successfully completing the requirements in this Order on Consent as set forth in Section III, the City shall submit for the EPA review and approval a final report (Final Report) that includes: (a) a description of all of the actions which have been taken toward achieving compliance with this Order on Consent; (b) an assessment of the effectiveness of such actions in eliminating SSOs; and (c) an analysis of whether additional actions beyond the scope of this Order on Consent are necessary to further eliminate SSOs. If the EPA determines, after review of the Final Report, that all the requirements of this Order on Consent have been met, the EPA will provide notice to the City and this Order on Consent shall be deemed terminated. If the EPA determines that any requirement has not been met in accordance with this Order on Consent, the EPA will notify the City, provide a list of the deficiencies, and may require the City to correct such deficiencies. If so required, the City shall address the deficiencies and shall submit a modified Final Report in accordance with the EPA notice. Failure by the City to implement the approved modified programs shall be a violation of this Order on Consent.

VI. GENERAL PROVISIONS

29. Respondent's compliance with this Order on Consent does not necessarily constitute compliance with the provisions of the CWA, 33 U.S.C. § 1251 *et seq.*, or with the City's Permit. The City shall remain solely responsible for compliance with the terms of the CWA and this Order on Consent and its Permit.

30. Failure to comply with the requirements herein shall constitute a violation of this Order on Consent and the CWA, and may subject the City to penalties as provided in Section 309(d) of the CWA, 33 U.S.C. § 1319(d).

31. This Order on Consent shall not relieve the City of its obligation to comply with all applicable provisions of federal, state or local law, nor shall it be construed to be a ruling on, or determination of, any issue related to any other federal, state or local permit. Compliance with this Order on Consent shall not be a defense to any actions subsequently commenced pursuant to federal laws and regulations administered by the EPA.

32. Issuance of this Order on Consent shall not be deemed an election by the EPA to forego any remedies available to it under law, including without limitation, any administrative, civil, or criminal action to seek penalties, fines, or other appropriate relief (including injunctive relief) under the CWA or any other federal or state statute, regulation or permit. The EPA reserves all rights and remedies, legal and equitable, available to enforce any violation cited in this Order on Consent and to enforce this Order on Consent.

33. This Order on Consent applies to and is binding upon the City and its officers, directors, employees, agents, successors and assigns.

34. Any change in the legal status of the City, including but not limited to any transfer of assets of real or personal property, shall not alter the City's responsibilities under this Order on Consent.

35. The City waives any and all claims for relief and otherwise available rights or remedies to judicial or administrative review which the City may have with respect to any issue of fact or law set

forth in this Order on Consent, including, but not limited to, any right of judicial review of this Order on Consent under the Administrative Procedure Act, 5 U.S.C. §§ 701-706.

36. Pursuant to Section 309(a)(4) of the CWA, 33 U.S.C. § 1319(a)(4), the EPA has sent a copy of this Order on Consent to the State of North Carolina.

VI. EFFECTIVE DATE

37. This Order on Consent shall become effective upon receipt by the City of a fully executed Order on Consent.

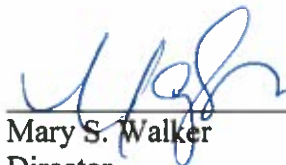
FOR THE CITY OF EDEN



Mr. Terry Shelton
Public Utilities Director
City of Eden

3/21/17
Date

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY



Mary S. Walker
Director
Water Protection Division

4/18/17
Date

Attachment 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4

IN THE MATTER OF:) ADMINISTRATIVE ORDER
)
THE CITY OF EDEN,) DOCKET NO. CWA-04-2012-4758
NORTH CAROLINA)
)
PROCEEDING UNDER SECTION)
309(a) OF THE CLEAN WATER ACT)
33 U.S.C. § 1319(a))
NPDES PERMIT NO. NC0025071)

ADMINISTRATIVE ORDER

I. STATUTORY AUTHORITY

1. Section 309(a) of the Clean Water Act (CWA), 33 U.S.C. § 1319(a), provides that, whenever the U.S. Environmental Protection Agency, Region 4 finds that any person is in violation of any condition or limitation which implements, *inter alia*, Section 301(a) and 402 of the CWA, 33 U.S.C. §§ 1311(a) and 1342, the EPA may issue an order requiring such person to comply with such condition or limitation, and shall specify a time for compliance that EPA determines to be reasonable.

2. The following Findings are made and Order issued pursuant to the authority vested in the EPA by Section 309(a) of the CWA, 33 U.S.C. § 1319(a), as amended. This authority has been delegated to the Regional Administrator of the EPA, Region 4, and further delegated by the Regional Administrator to the Director of the Water Protection Division, EPA, Region 4.

II. FINDINGS

3. To accomplish the objective of the CWA, as defined in Section 101(a) of the CWA, 33 U.S.C. § 1251(a), to restore and maintain the chemical, physical and biological integrity of the nation's waters, Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the point source discharge of pollutants by any person into navigable waters of the United States except as in compliance with a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

4. Section 402 of the CWA, 33 U.S.C. § 1342, establishes the NPDES permit program authorizing the EPA or authorized states to administer the NPDES permit program, including the issuance of NPDES permits allowing for the discharge of pollutants into navigable waters subject to specific terms and conditions. The EPA has granted the State of North Carolina, through the Department of Environment and Natural Resources (NCDENR), authorization to issue NPDES permits pursuant to Section 402(b) of the CWA.

5. The City of Eden (the City) is a "municipality" existing under the laws of the State of North Carolina and, therefore, is a "person" within the meaning of Section 502(4) and (5) of the CWA, 33 U.S.C. § 1362(4) and (5).

6. At all times relevant to this action, the City owns and operates a Publically Owned Treatment Works (POTW), including an associated Wastewater Collection and Transmission Systems (WCTS), and the Eden-Mebane Bridge Wastewater Treatment Plant (WWTP) located at 191 Mebane Bridge Road, Eden, North Carolina and operating under NPDES permit Number NC0025071. This POTW discharges "pollutants" as a "point source" into the Dan River, a navigable water, as defined in Section 502(7) of the CWA, 33 U.S.C. § 1362(7).

7. NCDENR issued NPDES Permit No. NC0025071 (the Permit), to the City for the Mebane Bridge WWTP with the effective date of April 20, 2010 and the expiration date of April 30, 2012 respectively.

8. The Permit includes a requirement, Part I.2., to properly operate and maintain the POTW, including the WCTS which collects and/or transmits wastewater to the Mebane Bridge WWTP. The WWTP and its associated WCTS make up the POTW.

9. On November 26, 2008, the EPA sent an information request letter to the City pursuant to Section 308(a) of the CWA, 33 U.S.C. § 1318(a). This information request letter required the City to respond and give the EPA information regarding details on all Sanitary Sewer Overflows (SSOs), as defined in Attachment A, that have occurred from the City's WCTS over the past five (5) years including the volume and cause of each SSO. Additional SSO data beyond the scope of the information request was received from NCDENR.

10. The response to the information request submitted to the EPA by the City indicates that the City experienced over 150 total SSOs between June 2006 and June 2011. Over fifty percent (50%) of the City's SSOs were caused by Inflow and Infiltration (I/I) and the City identified the pump station as the probable corrective action due to the flow exceeding the pumping capacity. See Attachment B for a list of these SSOs.

11. The City submitted the NCDENR Division of Water Quality *Collection System Sanitary Sewer Overflow Reporting Form* and an SSO reporting protocol as documentation of procedures in place to record SSOs. The protocol used does not address SSOs that back up into buildings.

12. On March 1, 2007, NCDENR issued the City a Special Order by Consent for frequent and repetitive SSO's occurring at Meadow Greens, Covenant Branch, and Long Street pump stations in violation of Part I.2. of the Permit. The City has taken corrective action to address I/I but continues to experience I/I in the same portions of the WCTS where corrective action has been completed under the NCDENR Order. On October 6, 2009, NCDENR concluded that the City met the terms and corrective actions of the Order and, therefore, terminated the Order.

13. On August 4, 2011, the EPA held a show cause meeting with representatives from the City and NCDENR to discuss the City's SSOs over the past five (5) years.

14. Based on the above, the City has violated Section 301(a) of the CWA, 33 U.S.C. § 1311(a), in that the City has discharged untreated wastewater containing pollutants to the navigable waters at locations not authorized by an NPDES permit.

15. Based on the above, the City has violated Part I.2. of the Permit, issued pursuant to Section 402 of the CWA, 33 U.S.C. §1342, by failing to properly manage, operate and maintain its WCTS resulting in SSOs from the WCTS.

III. ORDER

16. Based on the foregoing **FINDINGS** and pursuant to the authority of Section 309(a) of the CWA, 33 U.S.C. § 1319(a), **IT IS HEREBY ORDERED** that the City comply with the following requirements:

17. Management, Operation and Maintenance (MOM) Programs

The City shall develop the MOM Programs in accordance with the provisions of Sub-paragraphs 17.A through 17.D below. The goal of the MOM Programs shall be to eliminate all SSOs. For purposes of this Order, a SSO is defined as an overflow, spill, release, or diversion of wastewater from the City's WCTS. SSOs include overflows or releases of wastewater that reach navigable waters; overflows or releases of wastewater that do not reach navigable waters; and wastewater backups into buildings that are caused by blockages or flow conditions in a sanitary sewer other than a building lateral. Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned is not a SSO. All MOM Programs shall be developed in accordance with the EPA Region 4 guidance as set forth in the attached CDROM disk. Terms used in this Order that are defined in the CWA or in regulations promulgated pursuant to the CWA shall have the meanings assigned to them in the CWA, 33 U.S.C. §§ 1251 *et seq.*, and regulations promulgated under the CWA, unless otherwise provided in Attachment A to this Order.

A. System Evaluation and Rehabilitation Plans (SERP): The City shall develop a System Evaluation and Rehabilitation Plan (SERP) to evaluate and rehabilitate a portion of the City's WCTS, specifically Bridge Street, Meadow Greens and Covenant Branch basins and herein defined as the "Critical Basins" and to identify deficiencies within these Critical Basins that contribute to SSOs and excessive VI, as defined in Paragraph 10 above. The SERP shall include a plan of action to correct those deficiencies. The SERP will consist of a Capacity Assessment Plan, a Sewer System Evaluation Survey (SSES) and a Collection System Remediation Plan. In developing the SERP, the City shall refer to published guidance documents, including but not limited to, *Sewer System Infrastructure Analysis and Rehabilitation* handbook, EPA/625/6-91/030, October 1991; *Computer Tools for Sanitary Sewer System Capacity Analysis and Planning*, EPA/600/R-07/111, October 2007; *Existing Sewer Evaluation and Rehabilitation*, WEF MOP FD-6, 1994; the National Association of Sewer Service Companies (NASSCO) *Manual of Practice*; the NCDENR's *Minimum Design Criteria for the Permitting of Gravity Sewers*, February 1996; and the NCDENR's *Minimum Design Criteria for the Permitting of Pump Stations and Force Mains*, June 2000.

(i). Capacity Assessment Plan

a. Within six (6) months of the effective date of this Order, the City shall submit a Capacity Assessment Plan for the EPA's review, comment and approval that will describe how the City will undertake a Capacity Assessment that shall include an engineering study to comprehensively evaluate the design hydraulic capacity and actual dry weather and wet weather flow conditions of the Critical Basins. The Capacity Assessment Plan shall provide details on the methodology to be used (e.g., Manning/Chezy) and whether that methodology will be carried out using manual computations or computerized modeling. If computerized modeling is to be used for some or all of these analyses, a description of the software package(s) to be used shall be included in the Capacity Assessment Plan. In either case, both the overall approach

proposed and the specific analyses to be applied to the Critical Basins shall be described in detail.

b. The Capacity Assessment Plan shall propose rainfall monitoring and in-stream flow metering to measure actual flow in the Critical Basins. The flow and rainfall monitoring network shall be designed, installed, operated and maintained to provide representative data of sufficient quality for use in the development of the Capacity Assessment Plan. Monitoring site selection, equipment selection and installation, calibration, maintenance, and data quality assurance checks shall all be carried out to optimize monitoring accuracy, and shall conform to the equipment manufacturers' recommendations and current, sound engineering practices. The flow monitoring and rainfall data shall be used to prioritize additional flow monitoring and physical investigation activities.

c. The Capacity Assessment Plan shall include plans to evaluate pump station capacity as part of the system hydraulic analysis and identify any pump station deficiencies that cause or contribute to SSOs. Pump stations that shall be evaluated include: Dan River, Covenant Branch, Meadow Greens, Railroad, Industrial, Kuder Street, Bridge Street, Bear Slide and Junction.

d. The Capacity Assessment Plan shall include plans to evaluate worst-case (high flow/high groundwater) conditions, and all expected upstream and downstream influences, including hydraulic capacity and I/I, on each reach of a sewer affecting Critical Basins. For the purpose of this Order, Critical Basins, mini-basin(s) and basin(s) are defined in Attachment A.

e. Within 30 days of submitting the CAP, the City shall provide the EPA with information that substantiates its selection of the basins it considers critical. The information can include flow studies, rainfall data analysis, models and other information need to demonstrate that the completed and scheduled remediation efforts in the WCTS and Critical Basins respectively are designed to eliminate the SSOs experienced in the WCTS.

(ii). Capacity Assessment Report

a. Within fifteen (15) months after approval of the Capacity Assessment Plan, the City shall complete the Capacity Assessment and submit a Capacity Assessment Report.

b. The Capacity Assessment Report shall provide summary information on how the various collection system components were modeled and describe all simplifying assumptions that were used in the modeling effort. The hydraulic analysis results shall include a diagram of the hydraulic grade lines and surcharge conditions for each Critical Basin, an explanation of limiting factors (i.e., why the pipe surcharges at a given flow), and an analysis of pump station capacity affecting each segment analyzed.

c. The Capacity Assessment Report shall include a map or maps of usable scale of the WCTS, including the tributary pipes, that clearly displays the location of all known SSOs reported in the past five (5) years. The map(s) shall clearly identify

each basin and mini-basins defined by the City and identify Critical Basins and associated mini-basins. The map(s) may be divided into subsections and multiple pages for clarity.

d. The Capacity Assessment Report shall include an estimated number of sewage customers (per capita) for each Critical Basin and mini-basin. Estimations shall be made using all applicable categories of the "Discharge Facilities" and "Design Units" categories of the North Carolina Administrative Code Title 15A NCAC 2T .0114. The number of design units per discharge facility must be justifiable and based on sound engineering judgment. The Capacity Assessment Report shall also provide the volume of sewage transmitted and treated from all Significant Industrial Users.

e. The Capacity Assessment Report shall provide results of the hydraulic and excessive I/I analyses of all Critical Basins and associated mini-basins in the WCTS, including per capita usage calculations for each critical mini-basin.

f. The Capacity Assessment Report shall include a collection and transmission system model to assist in the development and implementation of operation and maintenance procedures to optimize transmission capacity within the WCTS and to evaluate the impact of I/I rehabilitation projects, proposed modifications, upgrades, and expansions on the transmission capacity.

g. The Capacity Assessment Report shall include a calculation of the amount of increased flow that will be transmitted to the WWTP as a result of eliminating SSOs in the WCTS, and assess the impact of increased flow to the WWTP.

(iii). Sewer System Evaluation Survey

a. Within six (6) months of the effective date of this Order, the City shall submit a Sewer System Evaluation Survey Work Plan for the EPA's review, comment and approval. This Sewer System Evaluation Survey Work Plan will describe how the City will undertake a Sewer System Evaluation Survey (SSES) that will result in the systematic examination of those Critical Basins and associated mini-basins to determine specific locations, estimated flow rates, methods of rehabilitation, and cost of rehabilitation versus the cost of transportation and treatment for each defined source of excessive I/I. The SSES Work Plan shall include plans to identify and quantify SSOs; identify and quantify sources of excessive I/I rates within the Critical Basins; identify sections of the Critical Basin with excessive I/I rates that cause and/or contribute to SSOs; identify cross connections and unauthorized connections; and identification of physical degradation of the WCTS, including general pipe condition and condition of force mains, that causes or contributes to SSOs. Upon the EPA-approval of the SSES Work Plan, the City shall implement the Work Plan in accordance with the schedules therein.

b. The SSES Work Plan may propose to incorporate appropriate and accurate existing attribute data, and as necessary, the collection and use of additional physical attribute data; verified existing rainfall and flow data, and as necessary, the collection and use of additional flow and rainfall data; monitoring of WWTP flows and flows at key locations within the WCTS; monitoring of groundwater and rainfall at

appropriate locations throughout the WCTS; physical investigation of the causes of excessive I/I and SSOs; and documentation of the condition of the portions of the WCTS causing or contributing to SSOs. The SSES Work Plan shall include the planned locations, types and rationale for placement of rain gauges, flow monitors, and any other equipment, and a discussion of how Doppler radar will be employed (if appropriate). The SSES Work Plan may also propose to utilize existing monitoring and characterization data only to the extent that the data are of adequate quality and for locations appropriate for the purposes of the SSES. The SSES Work Plan shall identify all existing data to be utilized; identify all additional data to be collected; and describe in detail how the existing and proposed additional data will satisfy the objectives of the SSES.

c. The SSES shall include, and the SSES Work Plan shall also establish plans to include, the following:

- 1) A review of existing data to be used for SSOs, sewage flows, WWTP and WCTS attributes (e.g., pipe diameters, pipe segment lengths, diversion structure characteristics, catchment characteristics, invert elevations, pipe interior roughness coefficients, etc.), rainfall, and groundwater levels; and an evaluation of the accuracy, completeness and adequacy of such existing data for purposes of supporting the characterization of the WCTS and sources of extraneous wet weather flow. The data review shall further identify all additional data needed to allow the SSES to satisfy the objectives stated herein.

- 2) Dry weather monitoring so as to allow the characterization of base flows and excessive I/I rates. Wet weather monitoring following events of sufficient duration and intensity to cause significant excessive I/I in the system, to allow the prioritization of mini-basin, and to support the development of the Capacity Assessment.

- 3) A network of rain gauge stations placed in accordance with industry standards and sound engineering practice.

- 4) Flow data collected using permanent and/or temporary flow monitors placed at locations in the WCTS necessary to allow the characterization of flow from each Critical Basin. The City shall inspect, maintain, and calibrate (if necessary) all flow monitors at least once per week.

d. The SSES Work Plan shall contain requirements to perform investigative activities in the locations determined to have excessive I/I, any Critical Basin and mini-basins, and any portions of the WCTS that cause or contribute to SSOs. The investigative activities shall be designed to locate and allow estimation of the wet weather flows associated with individual sources of excessive I/I, or shall identify physical degradation of the WCTS that causes or contributes to SSOs. The investigative activities shall include, but not be limited to, additional flow monitoring to isolate sources of excessive I/I; smoke testing; visual inspections of pipes and manholes; dye testing; night flow isolation; CCTV inspection to identify sewers in need of repair, rehabilitation, or replacement; and building inspections. The further investigative activities shall be sufficient to allow detailed characterizations of all significant sewer defects in Critical Basins and mini-basins with excessive I/I and SSOs and to support the development of capital improvement schedules.

c. The SSES Work Plan shall include expeditious schedules for performing and completing the SSES, including timelines for installation of sewer flow and rainfall monitoring equipment; completion of all monitoring activities, and for submitting the SSES Results. The SSES shall be completed no later than twelve (12) months after the EPA-approval of the SSES Work Plan. The SSES Results shall be submitted within two (2) months after completion of the Survey.

(iv). WCTS Remediation Plan

a. Within two (2) months after submission of the Capacity Assessment Report, the City shall develop and submit for the EPA review, comment and approval, a WCTS Remediation Plan with specific measures and schedules that, when implemented, will result in the elimination of all SSOs under current and future conditions.

b. The WCTS Remediation Plan shall identify all measures necessary to achieve adequate capacity. Adequate capacity is that capacity needed to collect, transmit and treat anticipated peak wet weather flows, without causing SSOs. At a minimum, peak wet weather flows shall include the conditions considered as part of the Capacity Assessment. If insufficient capacity to accommodate projected peak wet weather flows exists in any portion of the system, the City shall identify and propose measures to provide adequate capacity to eliminate SSOs.

c. The WCTS Remediation Plan shall identify all measures necessary to eliminate all SSOs caused by physical degradation of sewers, inadequate system capacity, including pump station capacities, or poor pump station reliability.

d. The WCTS Remediation Plan shall identify the degree to which sources of excessive I/I shall be removed, and the degree to which excessive I/I removal is expected to alleviate capacity constraints, and propose specific remedial measures that will address those capacity limitations not expected to be addressed by excessive I/I removal. Anticipated excessive I/I removal rates used in the development of the WCTS Remediation Plan shall reflect current industry practice and local experience. Specific remedial measures to address capacity limitations may also include increases in pump station and sewer capacity in the WCTS, construction of storage or equalization basin facilities, or increases in wastewater treatment capacity.

e. The WCTS Remediation Plan shall prioritize the remedial measures based upon: (1) relative likely human health and environmental impact risks; (2) SSO frequencies of overflows; and (3) total annual SSO volumes. The WCTS Remediation Plan shall provide a description of the methodology used in the prioritization.

f. The WCTS Remediation Plan shall provide basic project descriptions, estimated capital costs and a schedule for design, construction, and placement in service of all proposed measures that is as expeditious as possible, but in no event later than two (2) years after submission of the WCTS Remediation Plan (the Remediation Date). In addition, the WCTS Remediation Plan shall identify estimated begin/complete design, permitting, award contract, begin/complete construction dates for each measure proposed. In the event that major sewer interceptor replacement (or other major capital

improvement) is identified as a result of the Capacity Assessment and/or SSES, the City may request, in writing and with supporting documentation, for an extension beyond the Remediation Date. Approval of any extension beyond the Remediation Date shall be at the EPA's discretion and in writing.

B. Pump Station Operations Program: Within 90 days of the Effective Date of this Administrative Order, the City shall develop and submit for the EPA's review, comment and approval a Pump Station Operations Program (PSOP). The PSOP shall include a schedule providing for full implementation within three (3) months of the EPA program approval.

(i). Scheduled Pump Station Operations Program

The City shall have in place a scheduled pump station operations program that will address pump station operations at all pump stations that are conducted on a routine, scheduled basis. The program will define the standard pump station operating procedures to be followed at each pump station such as reading and recording information from the elapsed time meters, recording information from the pump start counters, observing wet well conditions and grease accumulation, checking and re-setting, as necessary to improve system performance, wet well set points, checking and recording system pressure, checking Supervisory Control and Data Acquisition (SCADA) components, checking alarms and stand-by power and identifying maintenance needs. The program will establish program elements such as schedules, routes, priorities, standard forms and reporting procedures and performance measures.

(ii). Emergency Pump Station Operating Program

The City shall have in place an emergency pump station operations program that will address pump station operations at all pump stations that are to be conducted as a result of equipment (mechanical) failure or loss of electrical power. The program will define the emergency pump station operating procedures to be followed at each pump station such as calling for emergency maintenance, initiating stand-by power by bringing in portable generators or initiating portable pump operations for pump around. The program will establish standard forms and reporting procedures and performance measures.

C. Pump Station Preventive Maintenance Program: Within nine (9) months of the Effective Date of this Administrative Order, the City shall develop and submit for the EPA's review, comment and approval a Pump Station Preventive Maintenance Program (PSPMP). The PSPMP shall include a schedule providing for full implementation within twelve (12) months of the EPA program approval.

(i). Short-Term Pump Station Repair Program

Within twelve (12) months of the Effective Date of this Order, the City shall certify to the EPA that all pump stations are in working order and in a state of good repair. If the City cannot make such certification, then the City shall provide a remedial action plan for each Pump Station not meeting the certification requirement and provide a schedule of implementation for such remedial actions.

a. Electrical Maintenance Program

The City shall have in place an electrical maintenance component of the preventive maintenance program for pump stations that will include provisions for all pump stations. The program will address elements such as the number of crews and personnel required,

standard electrical maintenance procedures, scheduling, standard forms, maintenance of records, performance measures and an information management system.

b. Mechanical Maintenance Program

The City shall have in place a mechanical maintenance component of the preventive maintenance program for pump stations that will include all pump stations. The program will address elements such as the number of crews and personnel required, standard mechanical maintenance procedures, scheduling, standard forms, maintenance of records, performance measures and an information management system.

c. Physical Maintenance Program

The City shall have in place a physical maintenance component of the preventive maintenance program for pump stations that will include provisions for all pump stations. The program will address elements such as the number of crews and personnel required, standard physical maintenance procedures, scheduling, standard forms, maintenance of records, performance measures and an information management system.

D. SORP: The City has been implementing a SORP for its WCTS. Notwithstanding any improvements already achieved through the SORP, the City shall revise its SORP to include tracking of building backups. Within 90 days after the effective date of this Administrative Order, the City shall submit to the EPA, for review, comment and approval a revised SORP. The SORP shall be submitted to the EPA for review, comment and approval and to ensure consistency with the requirements set forth below.

(i). Response. The SORP shall provide procedures for responding to SSOs to minimize the environmental impact and potential human health risk of SSOs. At a minimum, the SORP shall include, and the City shall implement, the following:

- a. For Building Backups, the SORP shall include a detailed plan describing the standard operating procedures to be followed by the City personnel in responding, including:
 - 1) A description of methods for communicating with customers about how to report Building Backups and how to obtain clean-up;
 - 2) A description of the City's response to Building Backups, including:
 - i. The measures taken to cleanup Building Backups found to be caused by conditions in the City's Sewer System. Such measure shall include procedures necessary to disinfect and/or remove items potentially contaminated by Building Backups, and shall include wet vacuuming or other removal of spillage, wiping floors and walls with cleaning solution and disinfectant, flushing out and disinfecting plumbing fixtures, carpet cleaning and/or replacement and other appropriate measures to disinfect and/or remove items potentially contaminated by Building Backups; and

- ii. The measures taken to correct or repair conditions in the Sewer System causing or contributing to Building Backups; and

3) A description of the City's follow-up process to ensure adequacy of cleanup.

(ii). Training. The SORP shall require, and the City shall provide, adequate training necessary for the City's employees, contractors, and personnel of other affected agencies to effectively implement the SORP. The SORP shall provide training guidelines to ensure adequate response training is provided to management and field personnel responsible for responding to SSOs. The City shall establish procedures and provide adequate training to response personnel for estimating volumes from SSOs.

(iii). Listing SSOs. The City shall identify and include in the SORP a list of those SSO locations within each basin that has been recorded as overflowing more than once in a twelve (12) month period and those locations at which a SSO is likely to occur first in the event of Pump Station failure for each Pump Station. The City shall establish routine inspection routes to be performed after each rain event. The inspection routes shall include all SSOs identified as occurring more than once in a twelve (12) month period and those Pump Stations that are not monitored at a central location via telemetry, SCADA, or other remote monitoring device. The City shall include procedures in which SSOs may be removed from the list.

(iv). The SORP shall be implemented within three (3) months of the EPA's approval.

IV. DOCUMENTATION AND REPORT SUBMITTAL

18. All reports, notifications, documentation, and submittals required by this Order shall be signed by a duly authorized representative of the City as specified by 40 C.F.R. §§ 122.22(b)(2) and (d) and shall include the following statement:

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

19. All reports, notifications, documentation, and submittals required by this Order shall be sent by certified mail or its equivalent to the following addresses:

Dénisse D. Diaz, Chief
Clean Water Enforcement Branch
Water Protection Division
ATTN: Mr. David Apanian, P.E.
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

and

Coleen Sullins, Director
Division of Water Quality
North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, North Carolina 27699

20. Notifications to, or communications with, the EPA and NCDENR by the City shall be deemed submitted on the date they are postmarked and sent by certified mail or its equivalent. Notifications to, or communications with, the City by the EPA shall be deemed received three (3) days after the date they are postmarked and sent by certified mail or its equivalent.

21. When circumstances are occurring, or have occurred, which may delay the completion of any requirement of this Order, whether or not arising from causes beyond the control of the City, including, but not limited to its consultants and contractors, despite the City's best efforts to fulfill the requirement, the City shall so notify the EPA, in writing, within fifteen (15) days after the City learns, or in the exercise of reasonable diligence under the circumstances should have learned, of the delay or anticipated delay. The notice shall describe in detail the basis for the City's contention that it experienced a delay, the anticipated length of the delay, the precise cause or causes of the delay, the measures taken or to be taken to prevent or minimize the delay, and the timetable by which those measures will be implemented. Failure to so notify the EPA shall constitute a waiver by the City of any claim for delay under this paragraph as to the event in question. If the EPA finds that a delay in performance is or was from causes beyond the control of the City, the EPA may extend the time for performance, in writing, for a period to compensate for the delay resulting from such causes.

V. FINAL REPORT AND TERMINATION OF THIS ORDER

22. Within 60 days after the City has satisfied the terms of this Order by establishing and successfully implementing for a period of twenty-four (24) months all the MOM Programs and other requirements in this Order as set forth in paragraph 16, the City shall submit for the EPA review and approval a final report (Final Report) that includes: (a) a description of all of the actions which have been taken toward achieving compliance with this Order; (b) an assessment of the effectiveness of such actions in eliminating SSOs; and (c) an analysis of whether additional actions beyond the scope of this Order are necessary to further eliminate SSOs. If the EPA determines, after review of the Final Report, that all the programs and other requirements of this Order have been established and successfully been in place for a period of twenty-four (24) months in accordance with this Order, the EPA will provide notice to the City and this Order shall be deemed terminated. If the EPA determines that any program or other requirement has not been established or successfully been in place for a period of twenty-four (24) months in accordance with this Order, the EPA will notify the City, provide a list of the deficiencies,

and may require the City to modify the programs as appropriate in order to correct such deficiencies. If so required, the City shall implement the modified and approved programs and shall submit a modified Final Report in accordance with the EPA notice. Failure by the City to implement the approved modified programs shall be a violation of this Order.

VI. GENERAL PROVISIONS

23. The City's compliance with this Order does not necessarily constitute compliance with the provisions of the CWA, 33 U.S.C. § 1251 *et seq.*, or with the City's NPDES permit. The City shall remain solely responsible for compliance with the terms of the CWA and this Order and its NPDES permit.

24. Failure to comply with the requirements herein shall constitute a violation of this Order and the CWA, and may subject the City to penalties as provided in Section 309(d) of the CWA, 33 U.S.C. § 1319(d).

25. This Order shall not relieve the City of its obligation to comply with all applicable provisions of federal, state or local law, nor shall it be construed to be a ruling on, or determination of, any issue related to any other federal, state or local permit. Compliance with this Order shall not be a defense to any actions subsequently commenced pursuant to federal laws and regulations administered by the EPA.

26. Nothing in this Order shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of the City's violation of this Order or of the statutes and regulations upon which this Order is based, or for the City's violation of any other federal or state statute, regulation or permit.

27. Nothing in this Order is intended to nor shall be construed to operate in any way to resolve any criminal liability of the City, or other liability resulting from violations that were not alleged in this Order. The United States does not waive any right to bring an enforcement action against the City for violation of any federal or state statute, regulation or permit, to initiate an action for imminent and substantial endangerment, or to pursue criminal enforcement.

28. This Order applies to and is binding upon the City and its officers, directors, employees, agents, successors and assigns.

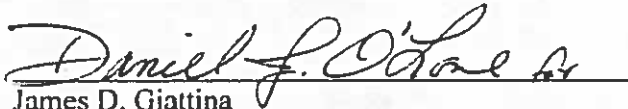
29. Any change in the legal status of the City, including but not limited to any transfer of assets of real or personal property, shall not alter the City's responsibilities under this Order.

30. Pursuant to Section 309(a)(4) of the CWA, 33 U.S.C. § 1319(a)(4), the EPA has sent a copy of this Order to the State of North Carolina.

VI. EFFECTIVE DATE

31. The effective date of this Order shall be the date upon which it is received by the City.

**IT IS SO ORDERED,
BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 4:**



James D. Giattina
Director
Water Protection Division

Date: 12/23/11

Attachment 2

System Evaluation and Rehabilitation Plan

Volume II-Addendum 2

Prepared by:

W.K. Dickson & Co., Inc.



On behalf of:

City of Eden, North Carolina

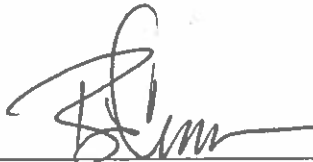


In Response to Administrative Order No. CWA-04-2012-4758


WKD #: 20120031.00.RA
W.K. Dickson & Co., Inc.
720 Corporate Center Drive
Raleigh, NC 27607
NC License No. F-0374

Certification and Signatures

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Brad Corcoran
City Manager
City of Eden



Terry Shelton
Director of Public Utilities
City of Eden

Engineer's Certification and Seal

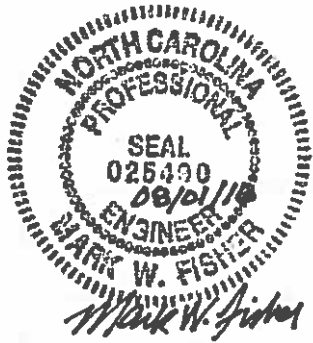


Table of Contents

Preface	A
Acknowledgments	B
Section 9 Wastewater Collection and Transmission System Remediation Plan-Addendum 2.....	1
9.1 Introduction	1
9.1.1 Connect North Carolina Bond.....	1
9.1.2 Slow Economic Recovery	3
9.1.3 Compliance Schedule Options	5
9.2 Revised WCTS Remediation Plan	6
9.2.1 Clarification of WCTS Remediation and WCTS Long Range Plan Improvements.....	6
9.2.2 Notable Revisions and Additions to the WCTS Remediation Plan	7
9.2.3 Notable Revisions to the WCTS Long Range Plan Improvements (20-Year CIP).....	15
9.3 WCTS Financial Plan	35
9.3.1 Revised Financial Plan Overview	35
9.3.2 Financial Plan Framework.....	36
9.4 Implementation Plan	39

Figures

Figure 9-1: Vicinity Map of Proposed Remediation Measures	19
Figure 9-1.A: Capacity/MOM Additional Evaluation Efforts	20
Figure 9-1.B: Meadow Greens Remediation Measures	21
Figure 9-1.C: Covenant Branch Basin Remediation Measures.....	22
Figure 9-1.D: Bridge Street Basin Remediation Measures.....	23
Figure 9-1.E: Junction Basin Remediation Measures	24
Figure 9-1.F: Kuder Street Basin Remediation Measures	25
Figure 9-1.G: Dry Creek Basin Remediation Measures	26
Figure 9-1.H: Pump Station Improvements	27
Figure 9-1.I: MBWWTP Improvements-Aerobic Digestion Upgrades.....	28
Figure 9-2: Vicinity Map of WCTS Long Range (20-Year CIP) Improvements	29
Figure 9-2.A: Pump Station Improvements and SSES	30
Figure 9-2.B: Bridge Street Basin Prioritized Sewer Replacement/Rehabilitation (Remaining PACP Grade 3 Sewers).....	31
Figure 9-2.C: Kuder Street Basin Prioritized Sewer Replacement/Rehabilitation	32
Figure 9-2.D: Village Basin Sewer Replacement (Substandard Diameters)	33
Figure 9-3: Potential Force Main Improvements to Facilitate Wastewater Flows from Potential Industrial Users	34

Figure 9-4: WCTSRP Expenditure and Revenue Projections (Potential Scenario)	38
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Tables

Table 9-1: Revised WCTS Remediation Matrix.....	16
Table 9-2: Revised 20-Year WCTS Improvements (Non-Remediation Projects).....	18
Table 9-3: WCTSRP Financial Plan.....	35
Table 9-4: Implementation Schedule of WCTSRP	40

Preface

Volume II of the System Evaluation and Rehabilitation Plan is the result of a comprehensive evaluation and investigation effort. Volume I, which contains the work plans for the Capacity Assessment, Rainfall and Flow Monitoring and Sanitary Sewer Evaluation Study, established the purpose, objectives, guiding principles and methodologies to execute the Capacity Assessment and Sanitary Sewer Evaluation Study. Volume I was published on June 27, 2012 and approved by the United States Environmental Protection Agency on January 27, 2014. The Capacity Assessment (Section 5, Volume II) and Sanitary Sewer Evaluation Study (Section 6, Volume II) were integral in developing and establishing the Wastewater Collection and Transmission System Remediation Plan. Section 5, Volume II was submitted to the United States Environmental Protection Agency on April 27, 2015. Section 6, Volume II was submitted to the United States Environmental Protection Agency on January 27, 2015. Both of these documents are currently under review.

Addendum 1, which was submitted to the United State Environmental Protection Agency on October 4, 2015, provided additional information related to economic hardship and financial burden that was triggered by the closing of the MillerCoors brewing facility in Eden, North Carolina.

This addendum revises the Wastewater Collection and Transmission System Remediation Matrix and the implementation schedule in light of the recent passage of the Connect North Carolina Bond, local and regional economic factors and negotiations and consultations with both the United States Environmental Protection Agency (Region 4) and the North Carolina Department of Environmental Quality.

Acknowledgments

Volume II of the System Evaluation and Rehabilitation Plan was a collective effort of W.K. Dickson & Co., Inc. and their numerous investigative partners and the City of Eden. Numerous City management and staff contributed to the preparation of this document including their local knowledge and support throughout the investigation and evaluation. Without their support and assistance, the thoroughness and detail of this document would not have been possible. Noted City management, staff, and divisions include:

- Brad Corcoran-City Manager
- Terry Shelton-Director of Public Utilities
- Kelly Stultz –Director of Planning and Inspection
- Bev O'Dell-Director of Engineering
- Mark Bullins-Collections and Distribution Superintendent
- Melinda Ward-Wastewater Treatment Plant Superintendent
- Collections and Distribution Division Operation and Maintenance personnel
- Finance Department – Tammie McMichael and Amy Winn

Section 9 Wastewater Collection and Transmission System Remediation Plan-Addendum 2

9.1 Introduction

The Wastewater Collection and Transmission System Remediation Plan (WCTSRP) is hereby updated to include additional and vital funding and economic factors that provide the City of Eden (COE) the opportunity to complete the remediation projects as outlined in this addendum within five (5) years as opposed to the original requested implementation schedule of twenty (20) years. This revised WCTSRP is aggressive, still places a significant financial burden on Eden, and is contingent upon financial aid from grant and loan proceeds from the Connect North Carolina (NC) Bond. It is also supported by possible industrial prospects starting to show interest in the nearby Mega Park that may help fill the void of the closing of the MillerCoors Eden Brewery and could offset the loss of this significant water revenue, which was documented in Section 8 (Addendum 1).

9.1.1 Connect North Carolina Bond

The Connect NC Bond was approved by primary voters on the March 15th 2015 primary ballot. The two billion dollar (\$2B) bond provides statewide investments in education, parks, safety, recreation and water and sewer infrastructure. The importance of the Connect NC Bond to water and sewer infrastructure is noted by this funding announcement from the Division of Water Infrastructure (DWI) of the North Carolina Department of Environmental Quality:

“Connect NC Bonds: The Connect NC Bond Bill (Session Law 2015-280) provides for a total of \$309.5 million in water and wastewater funding and is administered by the Division of Water Infrastructure, through the State Reserve Project Grants and Loans program. The Connect NC bond funding will be awarded in three separate rounds. The portion that will be awarded during this funding round is part of the total discussed below under “State Reserve Program”. Of the \$309.5 million Connect NC Bond funding total, \$100 million is provided for grant funding and the remainder is provided for loans. Since the loan funds are deposited into the state revolving loan programs, these funds will be used over and over as loans are paid back and new loans are made from loan repayment revenues.”

Sub-subdivision requirements of Section 1.f (2).d of Session Law 2015-280 are of critical importance to Eden’s current position. These requirements are defined as follows:

- “d. The proceeds of public improvement bonds and notes, including premium thereon, if any, for the Department of Environmental Quality for Statewide Water/Sewer Loans and Grants, as provided in subdivision (1) of this subsection, shall be allocated to the Water Infrastructure Fund established in G.S. 159G-22. One hundred million dollars (\$100,000,000) shall be used for grants, and the remainder shall be used for low-interest loans. The proceeds for loans and the proceeds for grants shall be allocated in equal proportion to the Drinking Water Reserve and the Wastewater Reserve and shall be subject to the following:

Remediation Plan-Addendum 2

1. *If the availability of loan funds exceeds project demand, the limits contained in G.S. 159G-36 applicable to a loan may be exceeded for the purpose of ensuring that all available loan funds are utilized for projects prioritized pursuant to G.S. 159G-23.*
2. *Loan and grant applications for projects shall be funded first if both of the following criteria are met: (i) the project is required to be completed due to an EPA administrative order or consent decree and (ii) the application for the project is deemed complete by the Division and meets the minimum requirements for the program from which it is seeking funding.*
3. *A grant application to be funded from the Wastewater Reserve and required to be prioritized under sub-sub-subdivision 2. of this sub-subdivision shall be awarded a grant equal to fifty percent (50%) of the project costs that are reasonably necessary to comply with the EPA administrative order or consent decree, notwithstanding limits otherwise applicable pursuant to G.S. 159G-36; provided that, the cumulative amount of all grants received by an applicant under this sub-subdivision does not exceed one-third of the amount of bond proceeds for grants allocated to the Wastewater Reserve.*
4. *A loan application to be funded from the Wastewater Reserve and required to be prioritized under sub-sub-subdivision 2. of this sub-subdivision shall receive a loan equal to the amount sufficient to cover all project costs that are reasonably necessary to comply with the EPA administrative order or consent decree minus the amount of any grant awarded under sub-sub-subdivision 3. of this sub-subdivision; provided that, the cumulative amount of all loans received by an applicant under this sub-subdivision does not exceed fifteen million dollars (\$15,000,000).*

In conclusion, the passage of NC Connect Bond offers the COE a tremendous financial opportunity to accelerate the remediation projects and lessen to a degree the financial burden on its customers. The COE is under an Administrative Order and demonstrates affordability criteria that are on the lowest end of the spectrum. Notable grant and loan opportunities include the following:

- Of the \$100,000,000 set aside for grants and loans for wastewater projects, 100% of that amount is designated for priority to complete an Administrative Order or Consent Decree. Presently, only three systems in North Carolina including Eden, Red Springs and Cape Fear Utility Authority (Wilmington and New Hanover County) are designated for priority. Therefore, the COE has the opportunity to secure up to \$16,660,000 in grant.
- The COE is eligible for the maximum loan of \$15,000,000. Although the language in the referenced Session Law indicates low interest loans, in this case, the interest rate of the loan will be 0% since it will be matching a State Reserve grant. The term of the loan will be twenty (20) years with loan repayment usually beginning 6 or 12 months after the original completion date noted in the Notice to Proceed of the construction contract.

9.1.2 Slow Economic Recovery

Although the local economy is tenuous at best, it as well as neighboring areas are showing signs of some recovery. Any potential economic improvement is largely being spearheaded by the emergence of the Berry Hill Road Industrial Park, also referred to as the Mega Site or Mega Park. It is a 3,700-acre site located in Pittsylvania County, Virginia near the North Carolina and Virginia border approximately 4 miles from the eastern fringes of the Draper section of Eden. The park is a joint project between Pittsylvania County and the City of Danville, Virginia. The size of the park tract is the largest in Virginia and is billed as the fifth-largest along the east coast.

Eden is also a participant in the development of the park by extending water and sewer utilities to help serve the demands of its tenants. The COE extended a 16-inch force main to the state line from the Railroad Pump Station (RPS) and have an agreement in place to receive and treat the first five (5) million gallons per day (MGD) of wastewater discharged from the park. The park's emergence and ability to gain commitments from prospective industrial clients were initially hampered for three years because of environmental and wetland permitting challenges with the United States Army Corps of Engineers (USACE). This permitting stalemate was finally resolved this spring allowing the park to proceed with the first phase of construction including clearing and grading three industrial site pads on approximately 150-acres. One pad is 109 acres, and two others are 20 acres each.

The pre-development and upcoming construction of the park has bolstered recruiting efforts and allowed interested industrial entities to see the commitment being made. Announcements of site investment and job announcements related to the Mega Park from the Danville-Pittsylvania Regional Industrial Facility Authority (DPRIFA) thus far include the following:

- Project 950-No details are available about the industry and what they produce or how many jobs will be created but this company has signed a purchase agreement for a 300-acre site including at least \$250 million investment in connection with the development of the site and construction and operation of the proposed facilities. They are currently in a due diligence period that will determine if the project will ultimately purchase the Mega Park and build their industrial plant there. It is anticipated to be a high water use industrial customer. Initial information conveyed to the COE from DPRIFA about Project 950 is that their water demand indicates the facility will need at least 4 MGD of treated water. At this time, no details have been provided on how much wastewater they may return on daily basis. This new water revenue could likely offset the revenue loss from MillerCoors. With the potential development of wastewater flows of up to 5 MGD from the Mega Park, the COE may begin to recover the sewer revenue that was lost when Hanesbrands Inc. closed in 2009.

Locally, the COE has received inquiries and interest from several potential high water use industrial customers about vacated industrial sites most notably the soon to be vacated MillerCoors and former Hanebrands facilities. Both of these facilities' wastewater discharges were served by RPS, which also serves the Dry Creek Basin and has approximately 3 MGD reserved for new industrial customers. Recently, one of the prospective industrial customers was interested in the former Hanesbrands facility as its building size of 950,000 square feet was consistent with their needs. This potential customer also

needed 5 MGD or more of wastewater discharge capacity. Although this interested customer has apparently dismissed Eden from its shortlist of final destinations, it does signal the growing interest of this vacated building's desirability and the COE's ability to provide large quantities of water and sewer at negotiated economic rates. According to City officials, they do not anticipate the MillerCoors facility to remain vacant for an extended period after it closes in a few months, as interest of it has not waned and because of several key factors including the abundance of skilled, local workers and the continued growing market of micro-brewing.

Lastly, the COE has entered into an agreement with Duke Energy to receive and treat leachate from their coal ash landfill site adjacent to their Dan River Steam Station. This agreement will be an additional revenue source although highly variable and short-lived that to some extent was not expected prior to the submittal of Addendum 1. The COE anticipates that initially flows could vary between 5,000 gallons per day (gpd) and 288,000 gpd based on activity in the landfill cells and rainfall during construction. These discharge rates are expected to continue for up to five years until the landfill is closed. After the landfill is completed and closed, the residual discharge rates will likely be less than 1,000 gpd and ultimately may cease in a few more years.

Notable conclusions and observations from this economic outlook include the following:

1. Potential customers such as Project 950 could assist the COE in recovering the \$1 million in water revenue because of the MillerCoors closing and a portion of the \$3 million in water and sewer revenue lost when Hanesbrands Inc. closed in February 2009. Although short-lived and highly variable, the revenue from receiving the coal ash landfill leachate will be beneficial. This somewhat optimistic financial outlook provides the COE with guarded confidence and reasonable ability to expedite remediation measures compared to their situation following the closing of MillerCoors in September 2016.
2. Caution and guarded optimism still must be exercised even if Project 950 becomes a reality. As noted in Addendum 1 of the WCTSRP, the closure of MillerCoors will leave a total workforce jobless of approximately 400 to 500 people. This amount of job loss will have an impact on the overall economy of Eden as many of these people may leave Eden to find work elsewhere resulting in a continuing population, residential water and sewer revenue and tax base decline. Additionally, if Project 950 becomes a reality, it will take an estimated \$16 million for water main transmission improvements to meet the estimated water demand requirements. While these amount of potential improvements would be justified for the economic development, it would put additional financial strain on the COE when coupled with existing debt service and the proposed debt service to fund the proposed WCTSRP.
3. The potential wastewater flows from Project 950 combined with current wet weather flows being received at RPS could subject the RPS to sanitary sewer overflows (SSOs). If Project 950 and the re-occupancy of the former Hanebrands Inc. and/or MillerCoors facilities were to manifest themselves at the same time, capacity issues would emerge at RPS requiring additional pumping and force main capacity. Therefore, continued reduction of rainfall derived inflow and infiltration (RD I/I) within the Dry Creek Basin is critical and remains the option of choice for the time being to avoid chronic SSOs

Remediation Plan-Addendum 2

from developing, if new flows are realized from the Mega Park. Based on the distinct possibility of additional high volume wastewater customers locating in the Dry Creek Basin and/or also in the Mega Park, the planned rehabilitation of the RPS, which was included in the original WCTSRP, could be a poor economic decision with very short-lived results. Therefore, the planned pump station rehabilitation should not be overlooked and is recommended to remain as part of the COE's 20-year Capital Improvement Plan (CIP), but the rehabilitation should be excluded from the remediation measures. If this slow economic recovery results in wastewater flows beyond what is potentially expected to occur from Project 950, the COE has several options to consider for increasing the capacity of RPS and its force main. These options are described in greater detail in Section 9.2. Financing of such improvements would be realized from the increased revenue of treatment of this additional wastewater flow.

4. A potential customer like Project 950 also heightens the importance of the current digestion deficiencies at the Mebane Bridge Wastewater Treatment Plant (MBWWTP). Potential flows from the possibility of this economic development opportunity combined with current average daily flows would approach or potentially exceed the capacity of the current digestion system. Given the significantly deteriorated conditions of the existing digestion unit and the potential increase of flows, the existing digestion unit is anticipated to reach a point of inoperability more quickly than originally projected in the Capacity Assessment Report (CAR) and WCTSRP. Therefore, digestion improvements are recommended to be included as a remediation measure.

9.1.3 Compliance Schedule Options

The financial capacity analysis in the original WCTSRP combined with supporting documentation in Addendum 1 provided mitigating factors as to why the COE could not have all remediation measures in service no later than two years after the submission of the WCTSRP. Based on discussions between the COE and the United States Environmental Protection Agency (USEPA-Region 4), the USEPA-Region 4 has no mechanisms or provisions within an administrative order to extend the compliance schedule for a 20-year duration. The longest duration that can be granted through the administrative order process is 5 years from the submission of the WCTSRP. All other extensions beyond 5 years require the compliance instrument or mechanism to be a consent decree or for the USEPA-Region 4 to possibly transfer enforcement of the WCTSRP to NCDEQ via a Special Order by Consent.

After careful evaluation by the COE, USEPA-Region 4 and NCDEQ of these options and the timely proposal and passage of Connect NC Bond, a consent decree and transfer of enforcement to NCDEQ were dismissed. A consent decree would have been significantly costlier due to the following factors:

- Some portion or level of penalties and administrative/legal costs are paid up front, which is even more challenging for smaller systems like Eden. Additionally, these expenses do nothing to solve the SSOs.
- Civil penalties for violations that occur during the consent decree are higher than the limits set forth in an administrative order. They also are strictly enforced whereas an administrative order offers much more flexibility to waive enforcement, provided the entity is making every effort to stop the SSOs.

If enforcement is transferred to NCDEQ, then the administrative order is lifted since it becomes a Special Order by Consent at the state level. Therefore, the COE would no longer be designated for priority and would not be eligible for a significant grant. The COE would then be in a similar position requiring 20 years to complete the remediation measures and facing a greater financial challenge.

In conclusion, the USEPA-Region 4 with support from the COE and NCDEQ agreed to keep the COE under administrative order and set the expiration five years from the notice of award of funding, which is expected to occur in mid to late January 2017. The administrative order is now expected to expire in January 2022.

9.2 Revised WCTS Remediation Plan

The original WCTS Remediation Plan that was defined in Section 7.3 has been revised to account for the NC Connect Bond funding opportunity, a possibly improving economic outlook, and the potential addition of some high volume water and wastewater users. These potential new customers could provide additional much needed water and sewer revenues and reinforce the anticipated success of the changes to the remediation measures, plans and strategies.

9.2.1 Clarification of WCTS Remediation and WCTS Long Range Plan Improvements

The original WCTSRP was summarized in Table 7-8. This table consisted of additional evaluation efforts, that still needed to be performed, and that were not part of the original capacity assessment and sanitary sewer evaluation efforts. It also included the necessary remediation measures to address chronic SSOs and capacity issues, physically deteriorated sewers that were causing SSOs, and poor pump station reliability.

The original WCTSRP also included several long range projects to address physical degradation and aging sewers and pump stations. These projects were grouped separately from the remediation projects since they were better defined being part of the COE's 20-year CIP. This separation, which can be referenced in Table 7-9, was primarily a function of affordability as the remediation costs identified in Table 7-8 along with prior expenditures for sewer rehabilitation already exceeded a heavy burden for the COE, in particular if the COE was forced to have to implement these measures at a more accelerated pace than what was originally proposed. It also was based on best estimated flow projections, prioritization and inventory, maintenance and condition data that were compiled at that time.

As noted in Section 9.1.2, potential flow increases have required changes to what should be included as remediation measure. Furthermore, additional factors have also aided in the revisions to WCTSRP and are described herein.

In conclusion, the revised WCTSRP has been simplified to only include the remediation measures that will be required as part of this Administrative Order and that will result in new expenditures for the COE. The long range plan improvements are still described and contained in this report given their importance for assessing financial and capital obligations through the planning horizon and fulfilling and enhancing the COE's asset management responsibilities and requirements.

9.2.2 Notable Revisions and Additions to the WCTS Remediation Plan

Table 9-1 summarizes the necessary remediation projects to satisfy the administrative order including the following objectives and goals:

- Achieve adequate capacity
- Eliminate all SSOs caused by physical degradation of sewers, inadequate system capacity, including pump station capacities, and poor pump station reliability

The following revisions and additions reconcile Table 9-1 from the previous version (Table 7-8):

1. **Monitoring of Identified Problematic Sewers with Pipeline Assessment and Certification Program (PACP) Grade 3 Defects (Bridge Street/Junction)**-This measure has been removed from the WCTSRP as the COE intends to include numerous sewer segments exhibiting Grade 3 defects, which reside near or just upstream or downstream of those more severely degraded sewers (Grades 4 and 5) in Bridge Street and Junction Basins. The addition of these sewers into the remediation plan is necessary given the economies of scale that can be gained by rehabilitating them now versus in the future, the preference to avoid multiple disruptions of the neighborhoods that would otherwise lead to construction fatigue and complaints from residents and citizens, and to provide further safeguarding of the collection system as SSOs could emerge at a later date if these sections are not rehabilitated. Remaining sections of sewer mains that contain Grade 3 defects and that will be rehabilitated in the future as a CIP will be monitored as part of the COE's commitment to a long range pipe rehabilitation program. The COE has enhanced their annual sewer main cleaning program and has incorporated more frequent closed circuit television inspection (CCTV) of problematic and high priority lines that are suitable for continued operation without rehabilitation.
2. **Post-Construction Rainfall and Flow Monitoring (Meadow Greens, Covenant Branch, Bridge Street, Kuder Street and Dry Creek)**-This measure is still critical to assess level of service and performance that is achieved by the rehabilitation projects. Instead of the COE being reliable on an external resource or a third party to evaluate the efficacy and performance of the reduction in RD I/I, the COE will receive training and support so their own resources can complete this effort. This approach will provide cost reduction, enhance the COE's Collection and Distribution Division's skill set, and provide additional expertise to bolster their preventative maintenance program.
3. **System-wide Inspection of Air Release (ARVs) and Combination Air Release Vacuum Valves (ARVVs)**-This project cost has already been encumbered, and therefore, it has been removed from the plan. The project is mostly complete, and its original scheduled completion of August 2015 was impacted and delayed by unforeseen issues including the closing of MillerCoors, the coal ash leachate discharge and its hydraulic impact on the force main transmission system, and possibly a Project 950 discharge and other flow inquiries, and their hydraulic impact on the force main transmission system. Spending additional funds on significantly overhauling the ARVs and ARVVs in light of these current events and the possibility of significantly changing or improving the force main network could result in poor financial decisions and also result in short-lived improvements. The plan at this time is to maintain these facilities and invest more in them if the COE finds that that they